Quality Frameworks for MOOCs

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QUALITY FRAMEWORKS FOR MOOCS

AUTHOR(s) - Darco Jansen, Jon Rosewell and Karen Kear

Abstract: The hype surrounding MOOCs has been tempered by scepticism about the quality of MOOCs. The possible flaws of MOOCs include the quality of the pedagogies employed, low completion rates, and a failure to deliver on the promise of inclusive and equitable quality education for all. On the other hand, MOOCs have given a boost to open and online education, have become a symbol of a larger modernisation agenda for universities, and are perceived as tools for universities to improve the quality of blended and online education, both in degree education and Continuous Professional Development. MOOC provision is also much more open to external scrutiny as part of a stronger globalising higher education market. This has important consequences for quality frameworks and quality processes that go beyond the individual MOOC. In this context different quality approaches are discussed, including possible measures at different levels and the tension between product and process models. Two case studies are described, one at the institutional level (The Open University) and one at a MOOC platform level (FutureLearn), and how they intertwine is discussed. The importance of a national or international quality framework which carries with it a certification or label is illustrated with the OpenupEd Quality label. Both the label itself and its practical use are described in detail. The examples will illustrate that MOOCs require quality assurance processes tailored to e-learning and open education, embedded in institutional frameworks. The increasing unbundling of educational services may require additional quality processes.

Key words: Quality of MOOCs, Dropout, Quality label, Open learning, E-learning quality

1. INTRODUCTION

Goal number four of the UNESCO Sustainable Development Goals states: "Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" (UNESCO, 2015a). In addition the *Education 2030 Declaration* (UNESCO 2015b, point 43, page 16) states "The provision of tertiary education should be made progressively free, in line with existing international agreements." MOOCs are generally seen as contributing to these goals as they provide complete learning experiences without any costs for the participants. However, this does not necessarily mean that MOOCs ensure quality education for all.

In exploring this issue, we start with the question: what is a MOOC? Bates (2015) considers MOOCs to share a combination of the four key characteristics related to the acronym Massive Open Online Course. A collaboration of EU-funded MOOC projects extended this to the following definition[1]: "an online course designed for a large number of participants that can be accessed by anyone anywhere, as long as they have an internet connection, is open to everyone without entry qualifications and offers a full/complete course experience online for free". This definition was recently validated amongst European institutions (Jansen, Schuwer, Teixeira & Aydin, 2015).

This definition positions MOOCs as part of both online and open education. But what openness means has been the subject of some debate (Open Education Handbook, 2014); openness must not be associated only with "free". In general, open education has the primary goal of removing barriers to education (Bates, 2015). Mulder & Jansen (2015) examine whether MOOCs can be instrumental in opening up education. Their main conclusion is that MOOCs cannot remove all barriers to learning, and hence can only contribute, to a certain extent, to ensuring quality education for all. The main flaw is that quality assurance and accreditation schemes are not yet equipped for MOOCs.

This raises the question of the relation between MOOCs and formal education. Are MOOCs essentially forms of non-formal education, with related flexible provision? Or are MOOCs a pathway to higher education, helping to ensure inclusive and equitable quality education for all? The latter option implies the need for similar quality assurance processes as in formal education.

This chapter reviews current and emerging practice for the quality assurance and quality enhancement of MOOCs. It stresses the importance of the use of international quality frameworks for MOOCs, embedded in

[1] http://www.openuped.eu/images/docs/Definition_Massive_Open_Online_Courses.pdf

institutional quality processes. In addressing the issue of how best to assure quality in MOOCs, the chapter considers the question of why quality matters for MOOCs. Quality frameworks and processes are then discussed, and illustrated with two case studies. In this context the OpenupEd Quality Label for MOOCs is considered.

2. WHY DOES QUALITY OF MOOCS MATTER?

Starting from the perspective of MOOC participants, we can argue that learners are entitled to a high quality learning experience, whether they are enrolled on a fee-paying, credit-bearing course or a MOOC. On this basis, it is valuable to consider whether the quality of MOOCs should be assessed in the same way as a university course with degree awarding processes, a question posed by Ehlers, Ossiannilsson and Creelman (2013).

2.1 Quality Pedagogy and Dropout Rates

MOOC have the promise to widen access to higher education to millions of people, including in the developing world, and ultimately enhance the quality of life for millions (Daniel, 2012). However, MOOCs generally attract only well-educated learners who already have higher education qualifications, and are already in employment (Macleod, Haywood, Woodgate & Alkhatnai, 2015). MOOC provision is dominated by a handful of platforms supported by elite universities, and very few MOOCs offer formal pathways to recognised academic qualifications. This poses a potential threat of inequality of access (Schuwer, Gil-Jaurena, Hakan Aydin, Costello, Dalsgaard, Brown, Jansen & Teixeira, 2015).

There is widespread scepticism of the quality of MOOCs and the pedagogies employed, for example those of xMOOCs (Gaisch & Jadin, 2014). Evidence supporting this sceptical view can be found in a study by Margaryan, Bianco, & Littlejohn (2015), which evaluated a sample of 76 MOOCs using a checklist of 37 items based on existing instruments for instructional design quality. The research included principles of effective learning activity, learning resources, and organisation. The MOOCs evaluated were a random sample from those available in late 2013 across a variety of platforms. The authors found that, while all MOOCs were well-packaged, they all scored poorly overall (median 9, range 0-28, on a scale from 0 to72) indicating poor instructional quality. Lowenthal & Hodges (2015) reviewed six MOOCs applying the Quality Matters rubric intended for traditional for-credit online courses. They concluded that “two of the MOOCs could pass this review and, therefore, be considered high quality online courses”.

Poor quality pedagogy is considered a threat that can damage the reputation of the institution and counteract the vision of MOOCs as being the best that higher education has to offer (Schuwer et al, 2015). However, alternative MOOC approaches exist, providing more inclusive and social approaches. Examples are pedagogical approaches like the well-known cMOOC (Siemens, 2012) and the more recent sMOOCs model (Brouns, Teixeira, Morgado, Fano, Fueyo & Jansen, 2016). In addition, inclusive MOOC partnerships have emerged, such as the ECO project (Osuna Acedo, Frau-Meigs, Camarero Cano, Bossu, Pedrosa & Jansen, 2016) and the OpenupEd initiative (Mulder & Jansen, 2015). These initiatives are characterised by distinct criteria and quality processes related to common features, specific pedagogical models, training of skilled (e-)teachers and scalability of re-using MOOCs and MOOC content.

A controversial topic related to the quality of MOOCs is the reported low completion rate. Neuböck, Kopp & Ebner (2015) and Macleod et al. (2015) have confirmed earlier findings by Hollands and Tirthali (2014, p. 42) that only "3% to 15% of all enrollees" complete a course. Jordan (2014) reported that the majority of MOOCs had completion rate of less than 10% with a median of 6.5% (p.150), although more recent data show some improvement to a median of 12.6% (Jordan, 2015). For many commentators, high dropout rates are a sign of the poor quality of MOOCs. But this may be only true in relation to the metrics of formal education i.e., if MOOCS are a pathway to formal higher education, low completion rates are disastrous. However, it is argued that many MOOC participants do not want to do the entire course; they are interested in gaining information and knowledge, but do not intend to get a certificate of completion. To make the personal learning objectives more visible, experiments with digital badging systems can be applied (Schön, Ebner, Rothe, Steinmann & Wenger, 2013), and the motivations and intentions of participants can be measured (Kalz, Kreijns, Niellissen, Castaño-Muñoz., Guasch, Espasa, Floratos, Tovar & Cabedo, 2014).

2.2 MOOCs for Lifelong Learning and Continuous Professional Development

MOOCs have prompted a broad discussion on the use of technology-based modes of teaching and learning in formal higher education and continuous professional development (CPD), as well as in initiatives to open up education. It is expected that new modes of teaching and learning, including MOOCs, will have an impact on the further development of these three areas of provision and will change the higher education landscape (CPL, 2015). MOOCs have become a symbol of a larger modernisation agenda for universities, intertwined with the concept of 'unbundling', and with related

economic imperatives about the viability, scalability, and sustainability of higher education (Selwyn, 2014). Institutions are developing online variants based around their own range of programmes in order to raise their national and international visibility, while helping to improve internal quality (e.g., Manturuk & Ruiz-Esparza, 2015).

2.3 Unbundling of MOOC Services

The growth of the MOOCs movement raises issues relating to the function and practice of quality assurance. Currently, universities consider the quality assurance of the MOOCs they provide to be an internal matter. However, MOOCs and other new modes of teaching are part of the move to unbundling of educational services. MOOCs are complete courses consisting of educational content, assessments, peer-to-peer tutoring and/or some limited tutoring by academics. All of these components can be outsourced by higher education institutions to third parties, for example video recording of lectures, automatic grading programs, authentication services and exam centres. Partnerships are growing between universities and for-profit education companies, including major educational publishers and global testing services. Partnering allows universities to fast-track into MOOC provision without the need to build internal capabilities. As a consequence, quality assurance systems can no longer focus only on educational institutions. However, Ossiannilsson et al. (2015) note that national higher education 'quality assurance standards and other regulatory instruments cannot easily be applied to partner organisations as they were not designed to regulate' such entities (p. 46). Up to now, national quality assurance agencies in Europe have not considered the quality assurance of MOOCs to be within their remit (e.g., NVAO, 2014). This would need to change if MOOCs were to become considerable parts of degree programs in the future.

2.4 Consequences for Quality Processes

Since MOOC provision is much more open to external scrutiny than is campus-based higher education, the quality of what a country's own universities offer as MOOCs is important to the 'national brand' of its higher education system; MOOCs form a window into the quality of the national HE system as a whole. The UK QAA recognised this in their 2014 position statement which states that MOOC providers should 'ensure that they reflect the established reputation of UK higher education' (QAA 2014). MOOCs may therefore be part of a general endeavour to maintain competitive position in

an expanding global market. These concerns will influence the degree of support of national governments for MOOCs and open education.

But this raises questions about how to ensure good governance, quality and overall responsibility for educational credentials. Assuring the quality of MOOCs should be seen as the shared responsibility of MOOC-platforms, cross-institutional partnerships and institutions, possibly with guidance and oversight from national quality agencies. To consider the balance between these stakeholders, an institutional and a MOOC platform perspective will be studied later in this chapter. In addition the quality label of a pan-European MOOC partnership (OpenupEd) is discussed in this context.

3. QUALITY FRAMEWORKS AND QUALITY PROCESSES

The previous section suggests that quality of MOOCs can be considered from the following four perspectives.

1. Quality from the learner's point of view.
   MOOCs attract a diverse range of learners, who come from different backgrounds and have wide ranging motivations for enrolling in a particular MOOC (e.g. Hill, 2013; Kizilcec, Piech & Schneider, 2013). Considering quality from the perspective of learners requires engaging with the diverse goals, expectations, learning behaviours, and abilities of learners to facilitate their own learning.
2. Quality connected to the pedagogical framework of the MOOC
   The pedagogical model of MOOCs should be designed to scale gracefully to unlimited numbers of participants, requiring the teaching and support effort to not increase significantly as the number of participants increases. Current research is beginning to examine qualitative indicators for dialogue and interaction that can guide the choice of pedagogical model. For example, Downes (2013) has formulated four key success factors in this area: autonomy, diversity, openness and interactivity.
3. Quality related to the input elements
   These may include aspects such as instructional design, the content and resources, multiple choice questions and assessment, the technology employed, and the quality of the teacher (e.g. Margaryan et al., 2015; Lowenthal & Hodges, 2015). For example, Costello, Brown & Holland (2016) found a number of flaws when analysing the multiple choice questions of several MOOCs. These aspects fit with the conventional views of course quality.
4. Quality based on outcome measures

> These might include the number of learners completing a MOOC or achieving certification. These metrics are (relatively) easy to measure. However, we know that not all learners intend to follow the instructional pathway of a MOOC. Taking completion rate as a measure for the quality of a MOOC has therefore been criticized (e.g.Weller, 2013; Clark, 2016). It is argued that low values of conventional measures, such as retention and completion, may not signal poor quality.

Consequently, the concept of quality in online education, and particularly in MOOCs, is complex. There are a variety of stakeholders involved: learners and educators, higher education institutions (HEIs), MOOC platform providers, quality agencies, governments, and potentially employers and others who might recognise achievement in a MOOC. Quality can also be viewed at three levels: macro (national), meso (institution) and micro (course) level (Nordkvelle, Fossland & Nettleland, 2013).

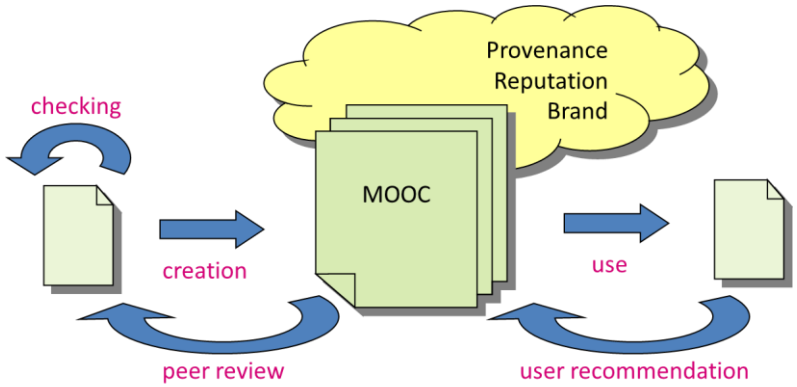

Figure 1: A model for MOOC quality processes

Figure 1 provides a simple view of MOOC quality processes. A learner faced with a choice of MOOCs will wish to be assured of their quality, and might wish to use reviews and recommendations of other learners. However, despite the very large numbers of MOOC learners, no MOOC rating website has become prominent and, given that many MOOCs are presented only once or a few times and may be changed between presentations, this approach may never bear fruit.

A potential learner therefore only has available a notion of brand reputation attaching to the MOOC platform, the originating institution, and possibly the course author. However, Daniel (2012) cautions that university brand is a poor measure of quality in online teaching, since reputations are gained primarily

in research rather than teaching. Nevertheless, both HEI and platform have a stake in maintaining their brand reputation. They can impose control by acting as reviewer and final gatekeeper, and also ensuring that a quality process is followed during course creation. (This assumes that MOOCs remain predominantly products of HEIs and are often related to core curriculum.)

One can see the system encapsulated in Figure 1 as a quality system where improving quality should be reflected in some measure. However, what should be optimised for a MOOC: learner satisfaction, completion rate, or some other measure? These conventional measures may not be appropriate if the intentions of MOOC learners differ from those of a conventional university student (Ehlers et al 2013). Butcher & Hoosen (2014) also question whether tightly structured frameworks for quality assurance can be applicable to MOOCs, because openness and flexibility are primary characteristics of these new approaches. However, the authors also suggest that, since both conventional HEIs and MOOCs offer higher education, quality principles developed for HE could be used to improve the quality of MOOCs and OER.

One way of dealing with these tensions would be to use a national or international quality framework which carries with it a certification or label. Such a visible recognition would act as a reassurance to all the stakeholders in MOOCs – learners, authors, institutions, platforms, employers, and quality agencies. In this chapter we focus on the OpenupEd Quality Label as an example.

The question then arises whether such a MOOC quality label should focus on product or process, and this echoes a long-running tension in the landscape of quality assurance in education. Ossiannilsson et al (2015) characterise this as a spectrum: from systems which check compliance to norms and often focus on product, to systems that aim at quality enhancement by focusing on process. They align this with a maturity model: low maturity systems are characterised by externally set norms, whereas in high maturity systems institutions have embedded processes aimed at quality enhancement towards their own objectives.

Ossiannilsson et al (2015) present a global survey of quality models for e-learning. They find that most models take a holistic view of quality, recognising the need to address many aspects of the enterprise. Although the models vary considerably in the detail and number of quality indicators, most cover a consistent set of important dimensions. For example, the E-xcellence framework uses six dimensions: Strategic Management, Curriculum Design, Course Design, Course Delivery, Staff Support and Student Support (Kear, Williams & Rosewell, 2014). If there is a consensus that this range of dimensions is appropriate for e-learning generally, it seems appropriate to use a similar framework for MOOCs.

The following case studies illustrate these ideas, and explore how quality can be assured during the development and presentation of MOOCs.

3.1 Case study: The Open University

This first case study discusses the UK Open University (UKOU), and its processes for offering MOOCs. This case study is presented broadly according to the six quality dimensions mentioned above.

3.1.1 Strategic Management

The UK Open University (UKOU) has a mission to increase access to higher education. Its courses and qualifications are open to all, regardless of prior qualifications. Most UKOU courses require payment, but since 1992 the UKOU has offered some learning resources for free. At the time of writing, it offers MOOCs in partnership with FutureLearn, as well as offering online open courses via its OpenLearn OER repository[2], some of which offer Mozilla badges on completion. FutureLearn MOOCs have a definite start time, and are hence presented to a cohort of learners; in contrast, OpenLearn courses can be studied at any time. In both cases there is a well-structured process for the development of the course, and for monitoring it in presentation, so that it can be improved.

The development of an open course follows a similar process to that used to develop all UKOU modules, although at a smaller scale. It still involves a number of staff from across the university, including academic faculties and the Learning and Teaching Solutions (LTS) unit which carries out course production.

3.1.2 Curriculum Design

A central Open Media Unit (OMU) has a specific remit to oversee and support open access developments, and each faculty has an Open Media Fellow whose role is to encourage the development of open access resources within the faculty. The process for approving a new course begins with a proposal from the faculty. This is then subject to institutional approval by OMU. In the case of a FutureLearn MOOC, there is also an approval process by FutureLearn, which depends on the fit with existing and proposed FutureLearn MOOCs from all partners.

[2] http://www.open.edu/openlearn

3.1.3 Course Design

One aim of the design stage is that the course should provide a mix of different media and activities which will engage learners and support their learning. In the case of a FutureLearn MOOC, each week's study consists of a number of 'steps' of up to 20 minutes study time. The steps include resources and activities e.g. videos, animations, discussions. Interaction between learners is encouraged by having a discussion thread associated with every step. At the end of each study week there is a quiz so that learners can check their knowledge and understanding. During the course development stage, any third-party resources will be cleared for copyright; course authors are encouraged to use open educational resources or other material available via a Creative Commons licence.

3.1.4 Course Delivery

After several stages of drafting, critical reading, editing and checking, the course is put onto the platform - FutureLearn for MOOCs or OpenLearn for UKOU open courses. There is then a final check before it is signed off by the course authors as ready for presentation. For a FutureLearn MOOC in presentation, UKOU trained online facilitators monitor the discussion threads, engaging with learners in the discussions as appropriate. In addition, FutureLearn moderates the discussions to minimise any offensive contributions (learners can identify such contributions themselves).

3.1.5 Staff Support

Courses are typically developed during a short but intensive period by just one or two experienced UKOU academics. Course authors are supported by critical readers (who are often UKOU tutors) and colleagues from OMU and LTS, in particular an experienced OU editor. At an early stage in the course development, a Learning Design workshop takes place, based on a framework developed at the UKOU (Galley, 2013; Conole, 2013). The workshop involves specifying the aims/learning outcomes for each week of study, together with the learning resources and activities. Training is offered by the UKOU audio visual department for any staff who are to appear in course videos.

3.1.6 Student Support

Once the course is in presentation, a number of quality metrics and processes come into play. Learner activity is closely monitored and measured,

and the data presented in detail back to the course authors in the form of a dashboard. Various measures of learner retention and activity are used as key parameters, both while the course is in presentation and once it is finished. For example, in a FutureLearn MOOC it is possible to tell if learners are struggling to complete a particular step; on this basis the learning resources for that step can be improved for later presentations, and the facilitators can be briefed on how to help learners in the current cohort.

At the end of the course, learners are invited to complete a feedback survey; or if they decide to withdraw part way through the course, they are invited to give feedback at that point. OMU also reviews the discussion threads, in order to investigate learners' reactions to different parts of the course. The survey data, together with retention data, student activity data and feedback gathered via the discussion threads, is used to carry out a review after the first course presentation. On this basis, decisions can be made as to whether the course should continue in presentation and how it could be improved for learners in the future.

3.2 Case study: FutureLearn

FutureLearn is an organisation that partners with universities and other groups to provide MOOCs on a wide range of topics. It is a limited company wholly owned by the UK Open University (UKOU) and benefits from the UK OU's long experience of online learning. The initial 12 FutureLearn partners were high status UK universities. At the time of writing, FutureLearn has 73 partners: the majority are universities in the UK and other countries, but there are also partners such as the British Museum and the European Space Agency.

FutureLearn courses typically last 3-8 weeks, and require 2-5 hours of study per week. The largest course, on English as a Foreign Language, attracted 400,000 learners in early 2015. FutureLearn has over 2.5 million registered users in more than 190 countries. In July 2015, 60% of FutureLearn users were from outside the UK; 60% were female; and the age range was from 13 to 93 (JISC, 2015). Most users already have a degree, but FutureLearn also has resources aimed at school leavers, including those making the transition to university.

FutureLearn has its own MOOC platform and hosts the MOOCs from all partners. The MOOC platform will operate on a range of devices, using different browsers. FutureLearn set out to create a 'modern, attractive, experience' for the learner (Simon Nelson in Chung, 2015) and it won the UXUK award for best user experience in late 2015[3]. The pedagogical approach aims to make the learning experience simple and well-structured.

[3] http://uxukawards.com/

Learning resources (e.g. text and videos) are organised into 'steps', which can be flagged as completed so that learners (and FutureLearn) can easily keep track of their progress. A model of social learning also informs the design; for example, discussion threads are closely integrated with the learning resources in each step so that learners can share ideas and experiences related to the material they are studying.

The FutureLearn approach of combining a clear structure and navigation with opportunities for discussion and debate appears to have led to high learner retention. An average of 22% of the people who begin a FutureLearn course are (to use FutureLearn's term) 'fully participating learners': they have carried out at least 50% of the steps and all the assessments (typically weekly quizzes). In terms of the number of people who sign up for a FutureLearn course, 12% are fully participating learners.

FutureLearn has a publicly available set of 'Openness Principles' which indicate its philosophy[4] with regards to open education, intellectual property and privacy. FutureLearn also has a detailed policy on 'Accessibility and Inclusion', which is used when reviewing courses[5]. This specifies the responsibilities of both FutureLearn and of the partner organisation providing the course material. The policy refers to FutureLearn's compliance with the World Wide Web Consortium's web content accessibility guidelines[6]. For example, the FutureLearn platform can be used via a keyboard and a screen reader; attention is paid to suitable font sizes and use of colour.

Learners may pay for a 'Statement of Participation' to demonstrate that they have completed a course, including the assessment. For some courses, and at a somewhat higher cost, FutureLearn offers invigilated examinations, in collaboration with Pearson VUE[7], which lead to a more formal 'Statement of Attainment'. No FutureLearn courses currently provide credit points from the partner universities, although there is nothing to prevent this if the partner considers it appropriate.

4. THE OPENUPED QUALITY LABEL

The OpenupEd partnership is an alliance of institutional MOOC providers, brought together by the European Association of Distance Teaching Universities (EADTU), who agree to follow the quality principles and practices represented in the OpenupEd Quality Label. The partners in OpenupEd have a commitment to opening up education through MOOCs to

[4] https://about.futurelearn.com/terms/openness/
[5] https://about.futurelearn.com/terms/accessibility-policy/
[6] http://www.w3.org/TR/WCAG/
[7] http://home.pearsonvue.com/

the benefit both of learners and of wider society. To this end, partners endorse the eight distinctive features described in Table 1 as guiding principles for their MOOC offering.

Table 1. The distinctive features of OpenupEd MOOCs

OpenupEd distinctive features	**Explanation**
Openness to learners [OL]	This captures aspects such as: open entry (no formal admission requirements), freedom to study at time, place and pace of choice, and flexible pathways. A broader perspective stresses the importance of being open to learners' needs and providing for a wide variety of lifelong learners.
Digital openness [DO]	Courses should be freely available online but in addition apply open licensing so that material and data can be reused, remixed, reworked and redistributed (e.g. using CC-BY-SA or similar).
Learner-centred approach [LC]	Courses should aid students to construct their own learning from a rich environment, and to share and communicate it with others; they should not simply focus on the transmission of content knowledge to the student.
Independent learning [IL]	Courses should provide high quality materials to enable an independent learner to progress through self-study.
Media-supported interaction [MI]	Course materials should make best use of online affordances (interactivity, communication, collaboration) as well as rich media (video and audio) to engage students with their learning.
Recognition options [RO]	Successful course completion should be recognised as indicating worthwhile educational achievement.
Quality focus [QF]	There should be a consistent focus on quality in the production and presentation of a course.
Spectrum of diversity [SD]	Courses should be inclusive and accessible to the wide diversity of citizens; they should allow a spectrum of approaches and contexts, accounting for a variety of language, culture, setting, pedagogics and technologies.

The OpenupEd Quality Label provides a process-based quality enhancement framework for MOOCs and their providers. It was derived from the E-xcellence label[8] (mentioned earlier) which provides a methodology for

[8] http://e-xcellencelabel.eadtu.eu/

assessing the quality of e-learning in higher education. E-xcellence has a review process that is based around a number of benchmark statements, grouped according to the six dimensions of Strategic Management, Curriculum Design, Course Design, Course Delivery, Staff Support and Student Support. E-xcellence has been periodically updated in the light of feedback from its reviewers and to reflect the changing nature of e-learning in HE; at the time of writing (2016) the current benchmarks and manual (Williams, Kear & Rosewell, 2012) are being updated.

The OpenupEd quality label[9] (Rosewell & Jansen, 2014) builds on E-xcellence by taking a similar approach; however, it adopts a lighter-weight process and adapts the benchmarks to better suit MOOCs. The benchmarks are divided into two groups: one that applies at institutional level and a second that applies to individual courses. The institution should be considered against the full set of institutional-level benchmarks but only at intervals. Every MOOC needs to be considered, but only against the much smaller number of course-level benchmarks.

An outline of the OpenupEd Quality Label process is as follows. OpenupEd partners are expected to be higher education institutions (HEI) that meet national requirements for quality assurance and accreditation. The HEI should have an internal procedure to approve a MOOC, typically a 'light-touch' version of the procedure applied to formal courses. The HEI should endorse the eight distinctive OpenupEd features listed in Table 1. New partners will obtain the OpenupEd Quality Label by a self-assessment and review process that will consider benchmarks both at institutional and course level (for two courses initially). The label must be renewed periodically; between institutional reviews, MOOCs will be reviewed at course level only. The HEI is expected to evaluate and monitor each MOOC in presentation, including data on participation, completion and student satisfaction, and an assessment of equality, quality, and diversity.

The self-assessment and review focus on the 21 institutional and 11 course-level benchmarks. A 'quick scan' checklist is provided (Figure 2) which lists the benchmarks with an accompanying grid to record two aspects. Firstly, an overall judgement on the extent to which the benchmark is achieved is recorded using a four-point scale: not achieved, partially achieved, largely achieved, or fully achieved (E in Figure 2). Secondly, a mapping can be made between each benchmark and the eight OpenupEd distinctive features; an initial mapping is provided but this can be adapted where necessary (D in Figure 2). For example, in Figure 2 benchmark 22 'A clear statement of learning outcomes for both knowledge and skills is provided' is mapped to the distinctive feature 'IL – Independent learning' to suggest that evidence

[9] http://www.openuped.eu/quality-label

gathered in relation to this benchmark is also likely to provide evidence of a course suited to independent learning.

A	B	C	D								E			
	Benchmark/indicator		OL	DO	LC	IL	MI	RO	QF	SD	NA	PA	LA	FA
	Course level													
22	**A clear statement of learning outcomes for both knowledge and skills is provided.**	10				x								
23	**There is reasoned coherence between learning outcomes, course content, teaching and learning strategy (including use of media), and assessment methods.**	11			x	x	x		x					
24	**Course activities aid students to construct their own learning and to communicate it to others.**				x									

Figure 2: Part of the quick scan checklist. Key: A – benchmark number; B – Benchmark statement; C – cross-reference to E-xcellence manual; D – mapping to OpenupEd features; E – grid for recording benchmark achievement

The quick scan can be used to give an initial picture of areas of strength and weakness. It can also highlight: where benchmarks may not be fully appropriate; where they may fail to capture good practice in a particular HEI or MOOC; and where additional detailed indicators might be helpful. The quick scan should then be fleshed out by a more detailed self-assessment process, ideally including different stakeholders such as teachers, managers, course designers and students. This should gather evidence for each benchmark, including the extent to which the evidence also supports the distinctive OpenupEd features. A plan detailing improvement actions is then prepared. The documented self-assessment and the improvement plan form the basis of a final review and discussion with external assessors, who then prepare a final report including their recommendation for the award of the OpenupEd Quality Label.

A number of documents and templates support this process. Assessor's notes are provided that cross-reference the OpenupEd benchmarks to additional indicators and background material in the E-xcellence manual (Williams, Kear and Rosewell, 2012), with supplementary material provided for MOOC-specific aspects where necessary (Figure 3).

31 Assessment is explicit, fair, valid and reliable. Measures appropriate to the level of certification are in place to counter impersonation and plagiarism.

See comments to Benchmark 29 above.

The advent of digital badges (for example Mozilla open badges) provides a method of rewarding achievement that may be appropriate for MOOCs. The award of digital badges can be linked to automated or peer assessment. Digital badges have an infrastructure that verifies the identity of the holder and provides a link back to the issuer and the criteria and evidence for which it was awarded. Badges thus may provide a validated award that can be kept distinct from the HEIs normal qualifications.

See also:

E-xcellence benchmark #17
Chapter 3 *Course design*
§ 2.4 Assessment procedures
§ 3.4 Assessment
§ 4.2.5 Online assessment

Figure 3 Example assessor's note, with cross-references to the E-xcellence manual.

4.1 The OpenupEd label in practice

The initial partners in OpenupEd were all members of EADTU. The consortium took the view that MOOCs from these providers were already being created under institutional quality processes that met the requirements of the OpenupEd label, and the initial portfolio of OpenupEd MOOCs therefore were not required to go through an additional review process.

Rodrigo, Read, Santamaría & Sánchez-Elvira (2014) report a self-assessment exercise of over 20 MOOCs on the UNED platform using the OpenupEd benchmarks. The assessed MOOCs had all been developed by experienced staff under a strong existing institutional quality framework for online learning; they could therefore be expected to meet the OpenupEd benchmarks. However the exercise highlighted some benchmarks which could not confidently be scored as largely or fully achieved; for example not all MOOCs gave a clear statement of learning outcomes, and materials were published under a restricted rather than an open licence. These are aspects that could be taken forward for discussion and perhaps inform institutional policy, leading to quality enhancement.

The authors also report that additional and more specific indicators would improve the benchmarking for their institution; these include specific academic roles (curator, facilitator), a variety of certification (badges, ECTS

credit), and flavours of MOOC pedagogy (c-MOOC, X-MOOC, SPOC). The OpenupEd assessor's notes do incorporate most of these issues (see Figure 3 for example), but they were judged too specific to be included in the standard benchmarks. Rodrigo et al also report issues such as teacher's workload and accessibility issues which became apparent during a course-level exercise, but which are covered by OpenupEd benchmarks at institutional rather than course level. The OpenupEd quality process suggests that initial self-assessment can be used to highlight benchmarks that are not fully appropriate to an HEI and to discover additional indicators needed to capture aspects of good practice. Rodrigo and colleagues therefore conclude that the OpenupEd Quality Label is a versatile tool, providing guidance with sufficient flexibility to meet an institution's aspirations without being a straitjacket.

5. DISCUSSION

The two case studies in Section 3 presented aspects of MOOC quality from the perspective of an institution (the UKOU) and of a MOOC platform provider (FutureLearn). In the discussion that follows we will focus on the joint enterprise – a representative MOOC designed by the UKOU and presented via FutureLearn – and do so through the lens of the OpenupEd Quality Label and its benchmarks (Rosewell & Jansen, 2014). The discussion is mapped to appropriate the OpenupEd benchmarks (for example #1) and OpenupEd features (for example DO; see Table 1 for key). To complete a quick scan (Figure 2) for a specific course would require in addition a judgement on whether the benchmarks and features are fully achieved or not.

5.1 Analysis of case study

Although we focus on this single example, it is likely that arrangements work similarly with other HEIs and MOOC platforms. It is also clear that quality emerges from the joint enterprise and is not solely the responsibility of one partner [#5, QF]. However, there is one reasonably clear division between the originating institution and platform provider marked by handover to the platform for publishing – before that point the weight of quality assurance falls on the HEI, with FutureLearn taking a greater role at and after handover [#6, QF].

The OpenupEd Quality Label takes the view that MOOC quality is best approached holistically, looking at the institutional processes as well as the completed product. Ossiannilsson et al. (2015) find the same approach in most e-learning quality frameworks. Both the UKOU and FutureLearn have clear strategies and processes for MOOC production which are seen as essential to

ensuring quality [#3, #5, QF]. These include commissioning processes on both sides so that course proposals are scrutinised at an early stage, one output of which is a course description [#18, #22, OL, IL]. This ensures that the course will meet the needs of learners [LC], as well as contribute to a MOOC portfolio that meets the strategic goals of both the HEI and platform [#1, #8, OL]. The UKOU delivers MOOCs on FutureLearn (with certificates) and on OpenLearn (with badges) [RO], which also includes access material [#8, OL, SD] and tasters for core non-MOOC curriculum [#7].

Both the UKOU and FutureLearn take very clear positions on aspects such as openness [#11, #27, DO], accessibility and inclusion [#4, OL], and these values therefore permeate normal work, helping to ensure that material is produced that conforms to accepted standards without needing rework at a late stage.

Course design is mainly the responsibility of the HEI, but is supported by guidance documents from FutureLearn [#9]. A strong steer is provided by the affordances of the platform, which is directed to a particular pedagogical model [#13, #23, LC, IL, MI]. This model appears to be successful, although it may limits the freedom of course authors to take alternative approaches. At a practical level, this can be seen in the way that FutureLearn currently only hosts a restricted set of resource types and activities [#13, #23], requiring the author or HEI to make alternative arrangements for some resources; the result is that not all FutureLearn courses are entirely self-contained [#5].

The UKOU process for course design follows the model used in development of their standard non-MOOC provision [#6, QF], although with fewer staff and at an accelerated pace. The early learning design workshop ensures that there is coherence between content, teaching and learning strategy and assessment [#23, LC, IL]. This workshop, together with guidelines from FutureLearn and the affordances of the platform itself (with its clear design in ‘steps’ and the emphasis on social learning [#20, #24, LC, SD]), also ensures that there is interactivity (student-to-student and student-to-content) to encourage active engagement [#29, LC, IL, MI]. Team writing and critical reading of drafts help to assure that content is relevant, accurate and current [#25, QF]. The process of course approval, which includes choice of authors, helps to ensure that staff have the required skills to develop material suitable for the proposed audience [#26, QF]. The UKOU already has significant capability in delivering online education with trained specialist support staff [#17, QF], but it has also provided some specific MOOC and media training [#15, QF]. The UKOU also has institutional structures and processes which promote educational research and innovation as important activities, for example its Institute of Educational Technology [#2, #16, QF]. FutureLearn complements this with the FutureLearn Academic Network which exists to

promote research around the FutureLearn platform and its learners [#2, #16, QF].

A clear division of responsibility is seen in course delivery, with FutureLearn having responsibility for providing the platform, which is effectively outsourced by the HEI, presumably with clear service level agreements and financial arrangements in place [#5, #12]. However, there is a shared responsibility for human input: FutureLearn provide moderators and the UKOU provide the course facilitators who act in an academic role [#21, IL]. The UKOU provides training for those undertaking the facilitator role, ensuring that staff delivering the course have suitable skills [#15, QF]. FutureLearn publish policies and guidelines for support that is available to participants [#19, #21, OL, IL]. There is a further division of responsibility in assessment: UKOU authors create embedded self-assessment and a final quiz [#29, #30, LC, IL]; FutureLearn handles certification [#31, RO].

Finally there is also a division of responsibility for monitoring and evaluating courses. The FutureLearn platform provides analytic and survey data, which is fed back to the UKOU as a dashboard during presentation [#14, QF]. UKOU course staff monitor the presentation and are able to respond to issues raised in discussion threads, although there is limited scope for changing the material itself during presentation. A thorough review by the UKOU after presentation is used to decide whether to continue presentation and to identify changes required to enhance quality [#32, QF]; since this is overseen by an institutional body there is a mechanism to share experience more widely [#10, QF].

5.2 General reflection

It should be clear from the above discussion that quality of MOOCs can only be measured against their design principles. Quality is the result of the application of a systematic process of design and evaluation, aimed at improvement over time. As such, quality enhancement for MOOCs is an iterative process, and design methodology at different levels of granularity can support this (e.g. see Dalziel et al., 2013, for learning design principles).

Quality needs to be thought about at both the institutional and course level, and the focus must include process and not just the resulting product. Both FutureLearn and the UKOU have invested in structures and processes that embed a concern with quality throughout the development, delivery and evaluation of a MOOC in order to assure the quality of any individual MOOC. Noticeably absent from the case study descriptions is any formal stage in the process that is labelled ‘Quality assurance’: this is because a concern with quality permeates the whole process.

The OpenupEd Quality Label and its benchmarks is sufficiently broad ranging that it can capture the quality practices described in these two case studies. Clearly the contributions of both parties (UKOU and FutureLearn) would have to be considered as part of the review and label. Members of OpenupEd are expected to be HEIs and it would be the HEI and its MOOCs that would be labelled, rather than the platform provider. An interesting boundary case occurs when a MOOC is transferred from one platform to another; for example, MOOCs presented by the UKOU on FutureLearn are later made available as self-paced open courses on its OpenLearn site. In this case, the institution will need to check that the course still complies with the OpenupEd features.

6. CONCLUSION

This chapter has explored the key issue of quality in relation to MOOCs. It has considered how questions of quality are raised by MOOCs, and has proposed approaches for assuring the quality of MOOCs. The chapter illustrated these ideas through two case studies of quality assurance for MOOCs, one focussing on FutureLearn - a platform provider which supports many institutions - and the other on the UKOU - a single institution which uses multiple platforms. These case studies illustrated the different quality processes involved.

It is concluded that MOOCs require quality assurance processes that are tailored to e-learning, embedded in institutional frameworks. There are existing e-learning quality approaches intended for use in formal, credit-bearing education that can be pressed into service; Ossiannilsson et al. (2015) provide a useful overview and guide to the issues.

The chapter also introduced the reader to the pan-European OpenupEd framework for enhancing quality in the development of MOOCs. The OpenupEd Quality Label is derived from the E-xcellence label, an established approach to quality assurance of e-learning and blended learning that has roots in the experience of open and distance learning institutions.

As HEIs increasingly collaborate on a global scale on their MOOC provision, additional quality processes are required. This is related to the unbundling of educational services and illustrated with FutureLearn and OpenupEd. These two examples demonstrates that this unbundling introduces distinct quality processes at a cross-institutional level. The OpenupEd Quality Label requires courses to address openness to learners and open licencing and is thus firmly rooted in the Open Education movement. This international dimension is expected to gain in importance as new kinds of partnership

emerge (Osuna et al, 2016) and if MOOCs are to become considerable parts of degree programs in the future.

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AUTHOR INFORMATION

Complete name (last/family name, first/given name, and middle name or initial as appropriate and any desired suffix such as Junior, III, etc.): Jansen, Darco

Institutional affiliation: EADTU (European Association of Distance Teaching Universities)

Institutional address: Parkweg 27, 6212 XN Maastricht, The Netherlands

Complete mailing address: EADTU, Parkweg 27, 6212 XN Maastricht, The Netherlands

Telephone number: +31 6 14829106

Fax number (optional):

Email address: darco.jansen@eadtu.eu

Website (optional): http://www.eadtu.eu/

Short biographical sketch (200 words maximum): Since 2010, Darco Jansen is programme manager at EADTU. He is responsible for development of themes for EADTU(-members) on Online Education, MOOCs and OER, Employability and on social innovation. Darco's fields of expertise are e-learning, open innovation, educational business development, continuous education, non-/informal learning and workplace learning. He worked for over 20 years at the Open Universiteit of the Netherlands. Currently Darco is the coordinator of the first pan European MOOC initiative OpenupEd and coordinator of several European MOOC projects. http://nl.linkedin.com/in/darcojansen

---

Complete name (last/family name, first/given name, and middle name or initial as appropriate and any desired suffix such as Junior, III, etc.): Rosewell, Jon

Institutional affiliation: The Open University

Institutional address: Walton Hall, Milton Keynes, MK7 6AA, UK

Complete mailing address:
Computing and Communications Department
Faculty of Maths, Computing and Technology
The Open University
Walton Hall
Milton Keynes
MK7 6AA
UK

Telephone number: +44(0) 1908 652619

Fax number (optional):

Email address: Jon.Rosewell@open.ac.uk

Website (optional):

Short biographical sketch (200 words maximum): Jon Rosewell is a Senior Lecturer at the UK Open University where he has developed and delivered distance learning courses in a range of subjects. He is an E-xcellence quality reviewer and worked on developing the E-xcellence benchmarks and manual, and more recently the OpenupEd Quality Label for MOOCs. Jon's research interests centre on technology enhanced learning, including assessment, informal learning and citizen science. His publications can be found at http://oro.open.ac.uk/view/person/jpr2.html

---

Complete name (last/family name, first/given name, and middle name or initial as appropriate and any desired suffix such as Junior, III, etc.): Kear, Karen

Institutional affiliation: The Open University

Institutional address: Walton Hall, Milton Keynes, MK7 6AA, UK

Complete mailing address: Computing and Communications Department, Faculty of Maths, Computing and Technology, Walton Hall, Milton Keynes, MK76AA, UK

Telephone number: +44 1908 655007

Fax number (optional):

Email address: karen.kear@open.ac.uk

Website (optional):

Short biographical sketch (200 words maximum): Karen Kear is a Senior Lecturer at the UK Open University. She has a PhD in Educational Technology, an MSc in Information Technology and an MA in Theoretical Physics. She is a Fellow of the UK's Higher Education Academy. Karen has developed distance learning courses on Information Technology for nearly 20 years. Having previously worked as an educational software designer, her main research interest is online learning. She has a number of publications in this field, including Online and Social Networking Communities: a best practice guide for educators, published by Routledge in 2011. Karen's publications can be seen at http://oro.open.ac.uk/view/person/klk2.html